

## 1 CLAIMS

1. A method for sterilizing a patient comprising introducing into a reproductive duct of the patient a composition comprising a nucleophilic component and a component containing a conjugated unsaturated bond, whereby the composition undergoes crosslinking within the reproductive duct.

2. The method according to claim 1, wherein the nucleophilic component is selected from the group consisting of thiols, amines and mixtures thereof.

3. The method according to claim 1, wherein the nucleophilic component is a thiol.

4. The method according to claim 1, wherein the nucleophilic component is selected from the group consisting of pentaerythritol-tetrakis(3-mercaptopropionate) and poly(ethylene glycol) hexathiol.

5. The method according to claim 1, wherein component containing a conjugated unsaturated bond is selected from the group consisting of acrylates, vinylsulfones, acrylamides, quinones and vinylpyridiniums.

6. The method according to claim 1, wherein the component containing a conjugated unsaturated bond is an acrylate.

7. The method according to claim 1, wherein the component containing a conjugated unsaturated bond is selected from the group consisting of poly(ethyleneglycol)diacrylate, poly(propylene glycol) diacrylate, pentaerythritol triacrylate, and poly(ethylene glycol) tetraacrylate.

8. The method according to claim 1, wherein the nucleophilic component is a thiol and the component containing a conjugated unsaturated bond is an acrylate.

9. The method according to claim 8, wherein the nucleophilic component is selected from the group consisting of pentaerythritol-tetrakis(3-mercaptopropionate) and poly(ethylene glycol) hexathiol.

1           10.    The method according to claim 9, wherein the component containing a  
conjugated unsaturated bond is selected from the group consisting of  
poly(ethyleneglycol)diacrylate, poly(propylene glycol) diacrylate, pentaerythritol triacrylate,  
and poly(ethylene glycol) tetraacrylate.

5           11.    The method according to claim 8, wherein the component containing a  
conjugated unsaturated bond is selected from the group consisting of  
poly(ethyleneglycol)diacrylate, poly(propylene glycol) diacrylate, pentaerythritol triacrylate,  
and poly(ethylene glycol) tetraacrylate.

10          12.    The method according to claim 1, wherein the composition further comprises a  
buffer solution.

15          13.    The method according to claim 1, wherein the composition further comprises a  
surfactant.

14.    The method according to claim 1, wherein the liquid further comprises a base.

20          15.    The method according to claim 1, further comprising increasing the pH of the  
composition prior to introducing the composition into the reproductive duct.

16.    The method according to claim 1, wherein the composition gels within the  
reproductive duct within 30 minutes of introduction.

25          17.    The method according to claim 1, wherein the composition gels within the  
reproductive duct within 15 minutes of introduction.

18.    The method according to claim 1, wherein the composition is introduced into  
the reproductive duct through a catheter.

30          19.    The method according to claim 1, wherein the composition further comprises  
at least one additional agent selected from the group consisting of radiopaque agents,  
progestins, spermicidal compounds, nonsteroidal anti-inflammatory compounds, anti-  
prostaglandin compounds, quinacrine, and agents that cause mucosal and/or tubal  
35    scarification.

1           20.    The method according to claim 1, wherein the composition further comprises progesterone.

5           21.    The method according to claim 1, wherein the composition further comprises a radiopaque agent.

          22.    The method according to claim 1, wherein the composition comprises:

          (a)    a buffer solution;

10          (b)    a nucleophilic component selected from the group consisting of pentaerythritol-tetrakis(3-mercaptopropionate) and poly(ethylene glycol) hexathiol;

          (c)    a component containing a conjugated unsaturated bond selected from the group consisting of poly(ethyleneglycol)diacrylate, poly(propylene glycol) diacrylate, pentaerythritol triacrylate, and poly(ethylene glycol) tetraacrylate; and

          (d)    a surfactant.

15          23.    The method according to claim 22, wherein the surfactant is selected from the group consisting of sorbitan monooleate and polyethylene glycol-co-polypropylene glycol.

20          24.    A method for sterilizing a female patient comprising introducing into at least one uterine tube of the patient a composition comprising a nucleophilic component and a component containing a conjugated unsaturated bond, whereby the composition crosslinks within the at least one uterine tube.

25          25.    A method for sterilizing a male patient comprising introducing into at least one ejaculatory duct and/or the vas deferens of the patient a composition comprising a nucleophilic component and a component containing a conjugated unsaturated bond, whereby the composition cross-links within the at least one ejaculatory duct and/or the vas deferens.